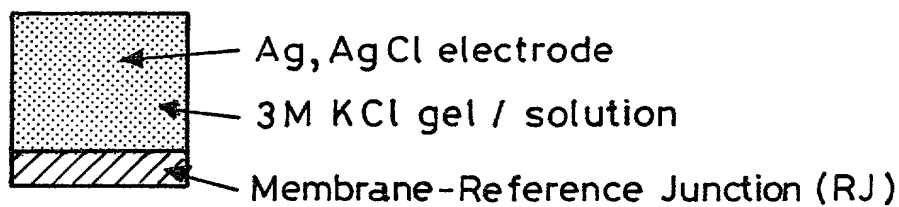
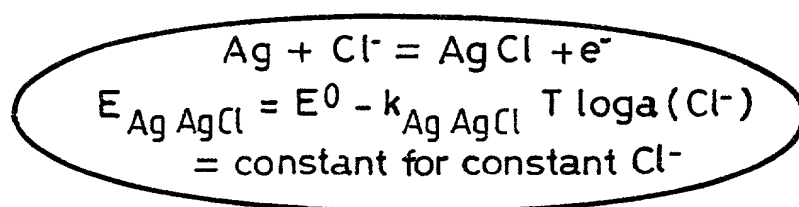
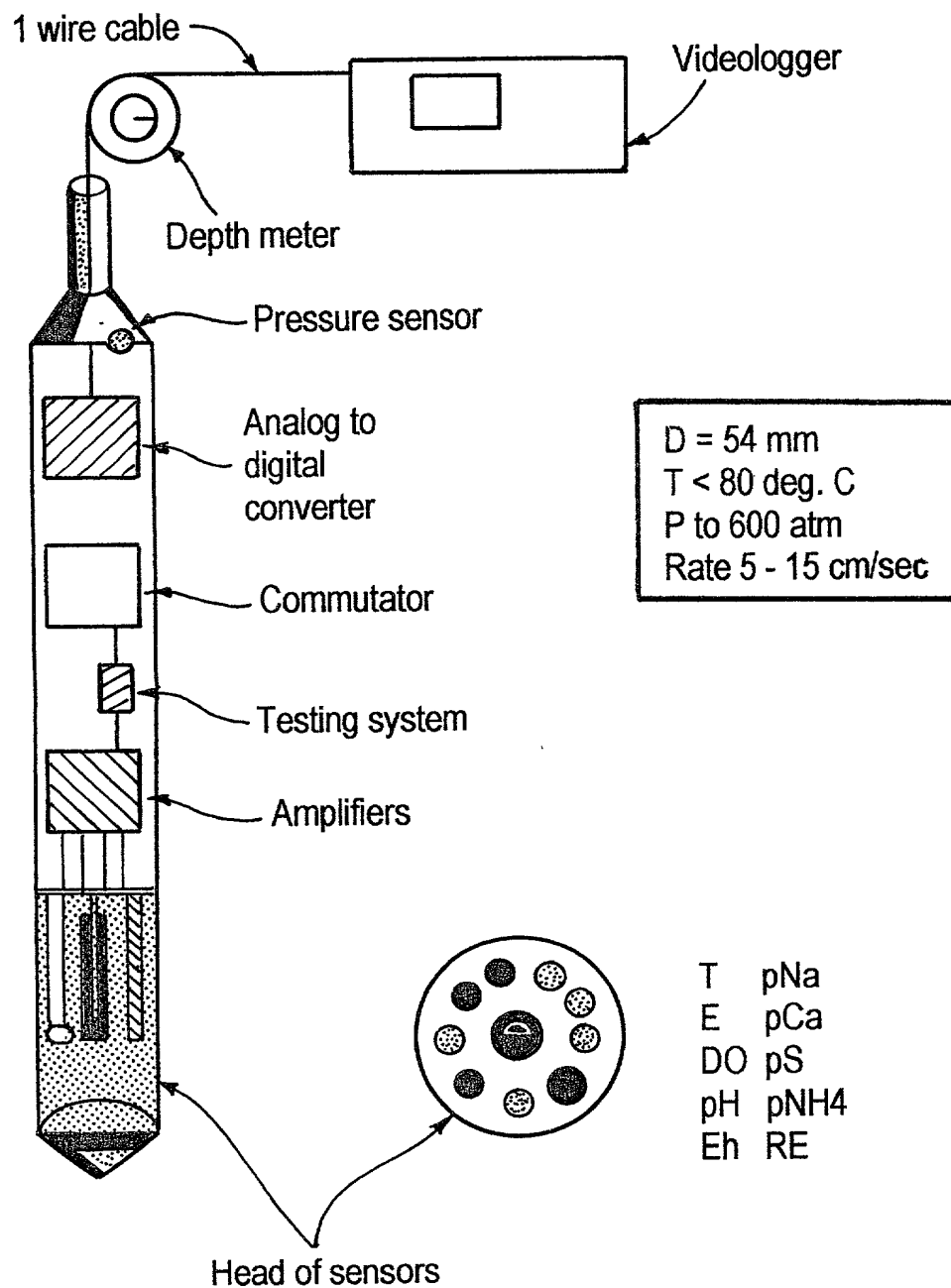


**Fig. 1**  
(Prior Art)

Reference electrode - keeping fixed potential



**Fig. 2**  
(Prior Art)



**Fig. 3**  
(Prior Art)

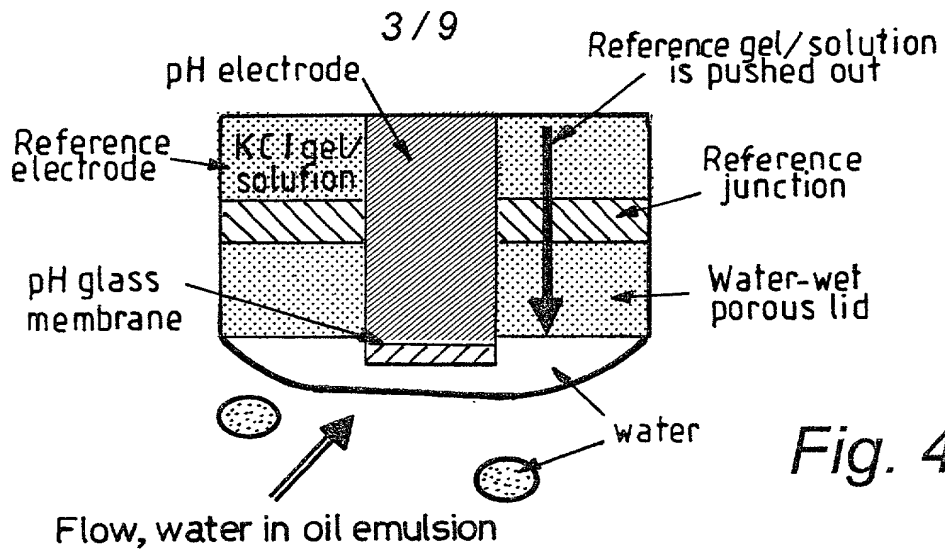


Fig. 4

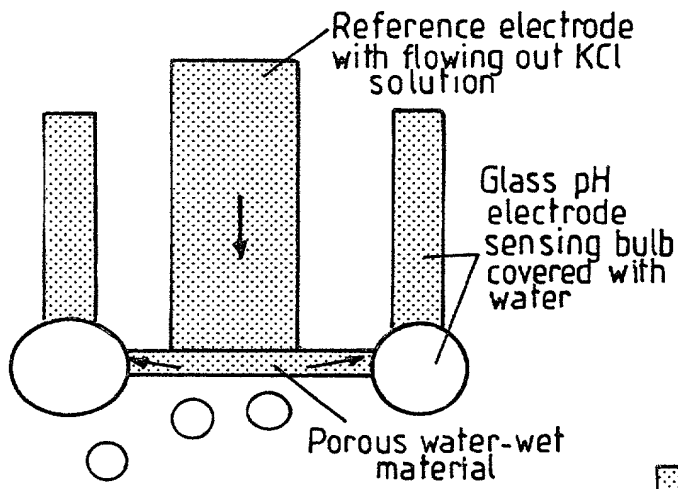


Fig. 5A

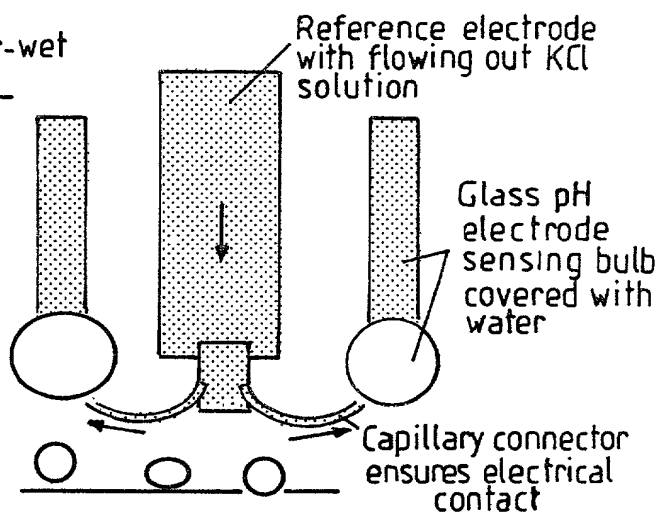


Fig. 5B

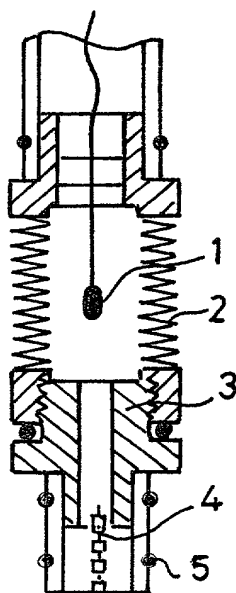


Fig. 6

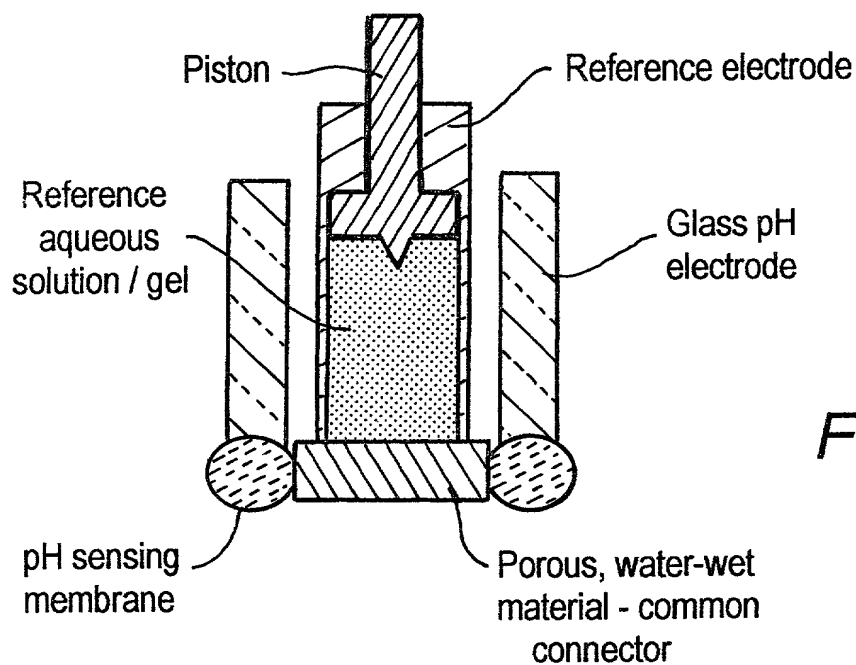


Fig. 7

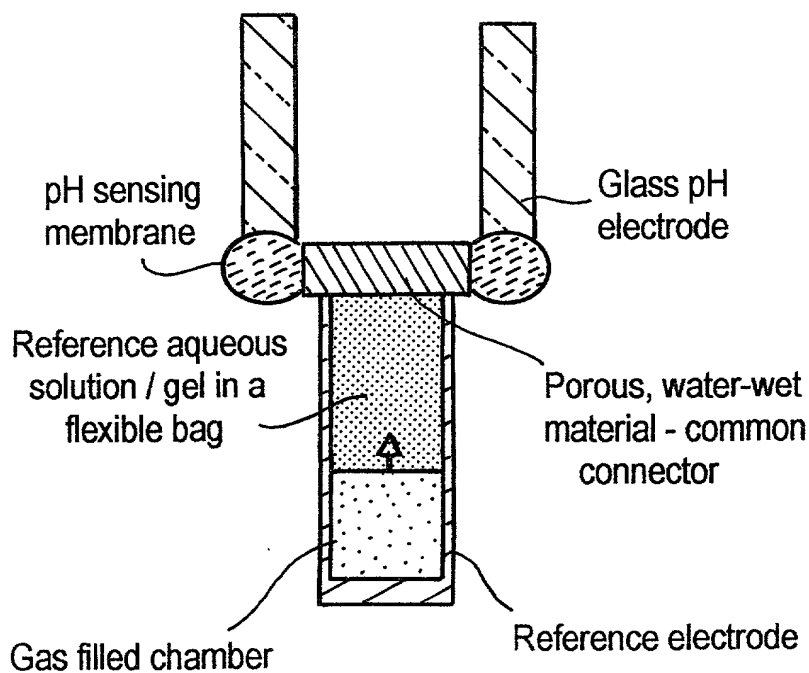


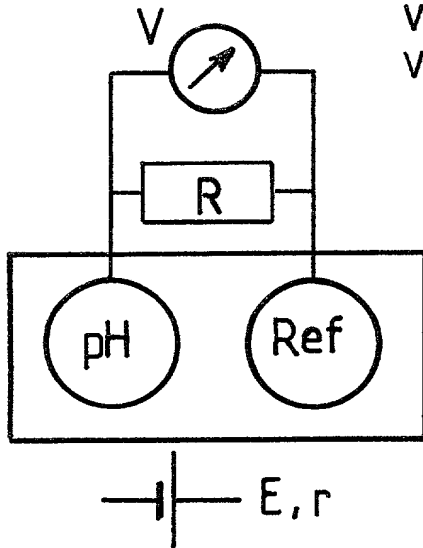
Fig. 8

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$$r = r(\text{pH}) + r(\text{Ref}) + r(\text{oil} + \text{water})$$

$V$  - signal without  $R$

$V_R$  - signal with  $R$



$$r = R * [(V - V_R) / V_R]$$

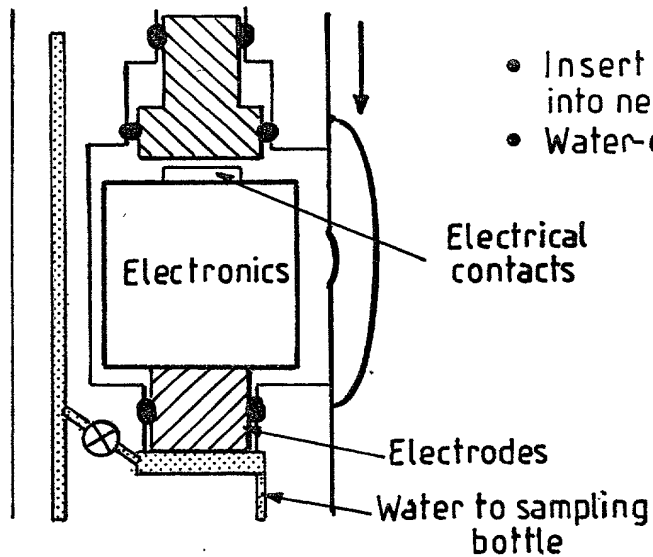
Good contact =>

$(V - V_R)$  in water =

$(V - V_R)$  in oil/water mixture

Fig. 9

New sensor design for MDT



- Insert mini Probe into new sampling module
- Water-only analysis

Fig. 10

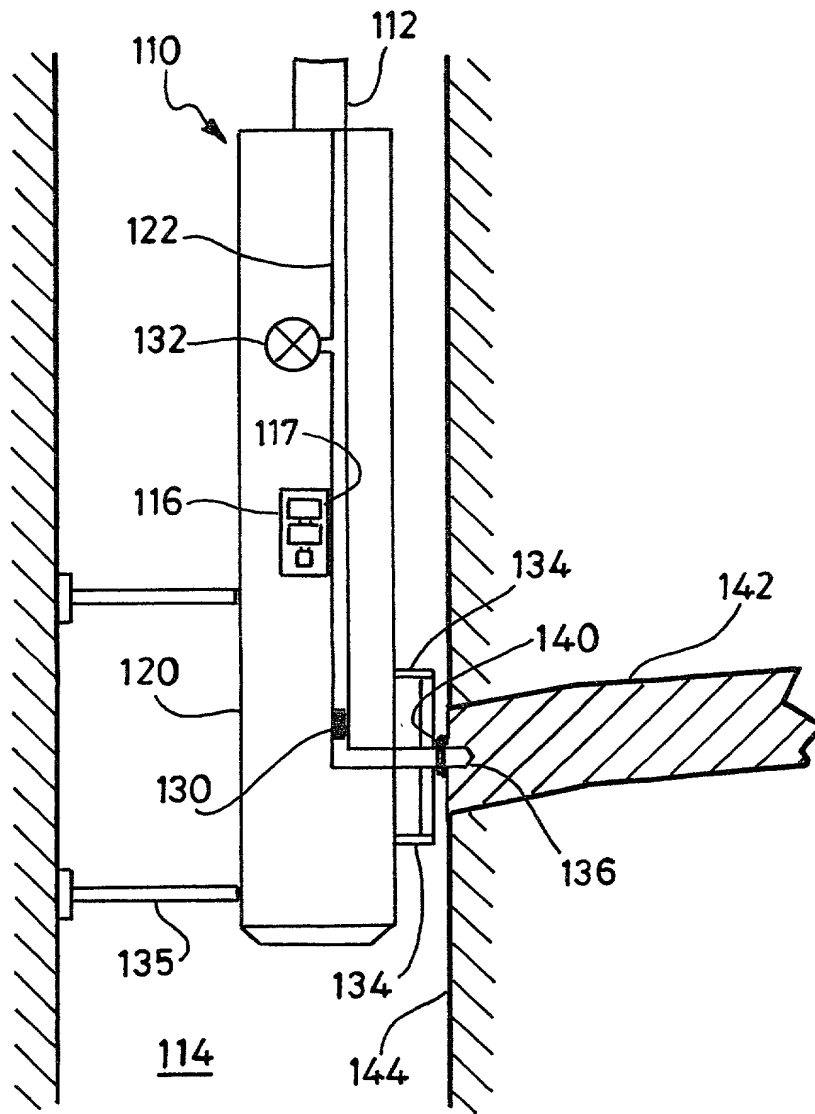
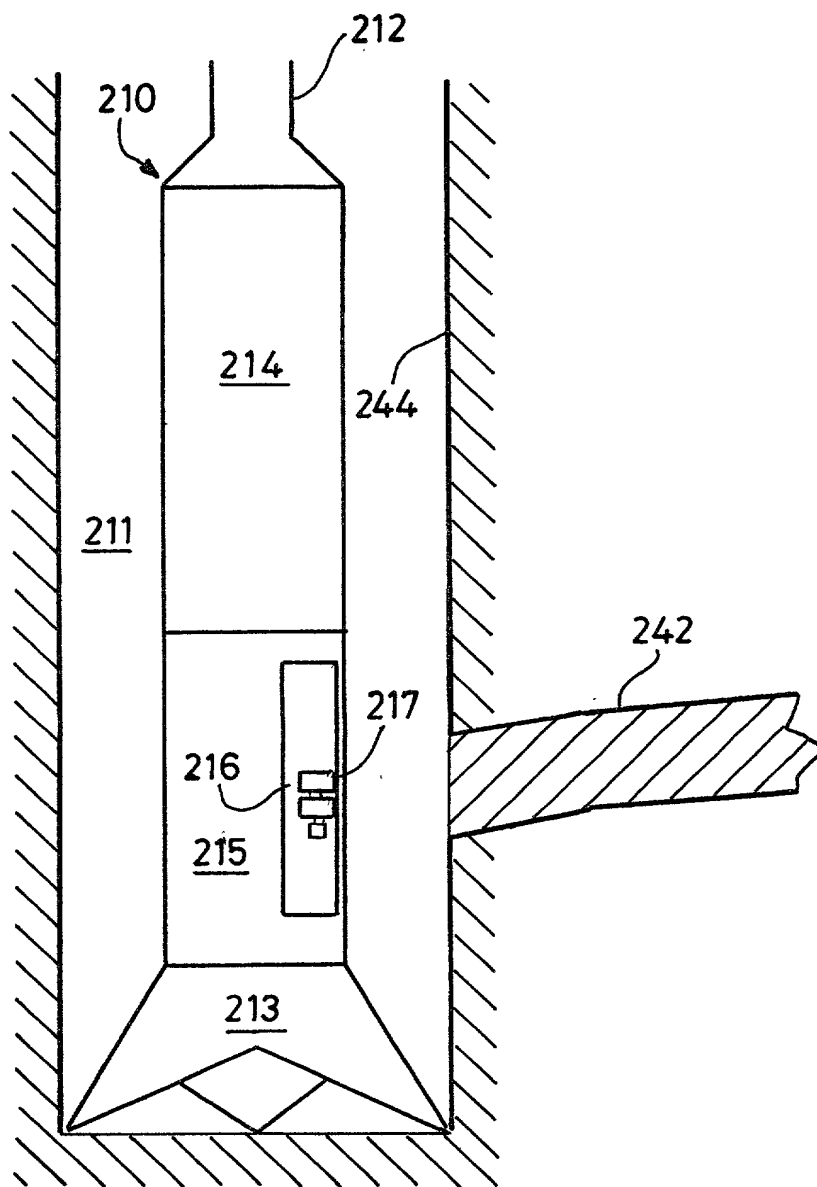
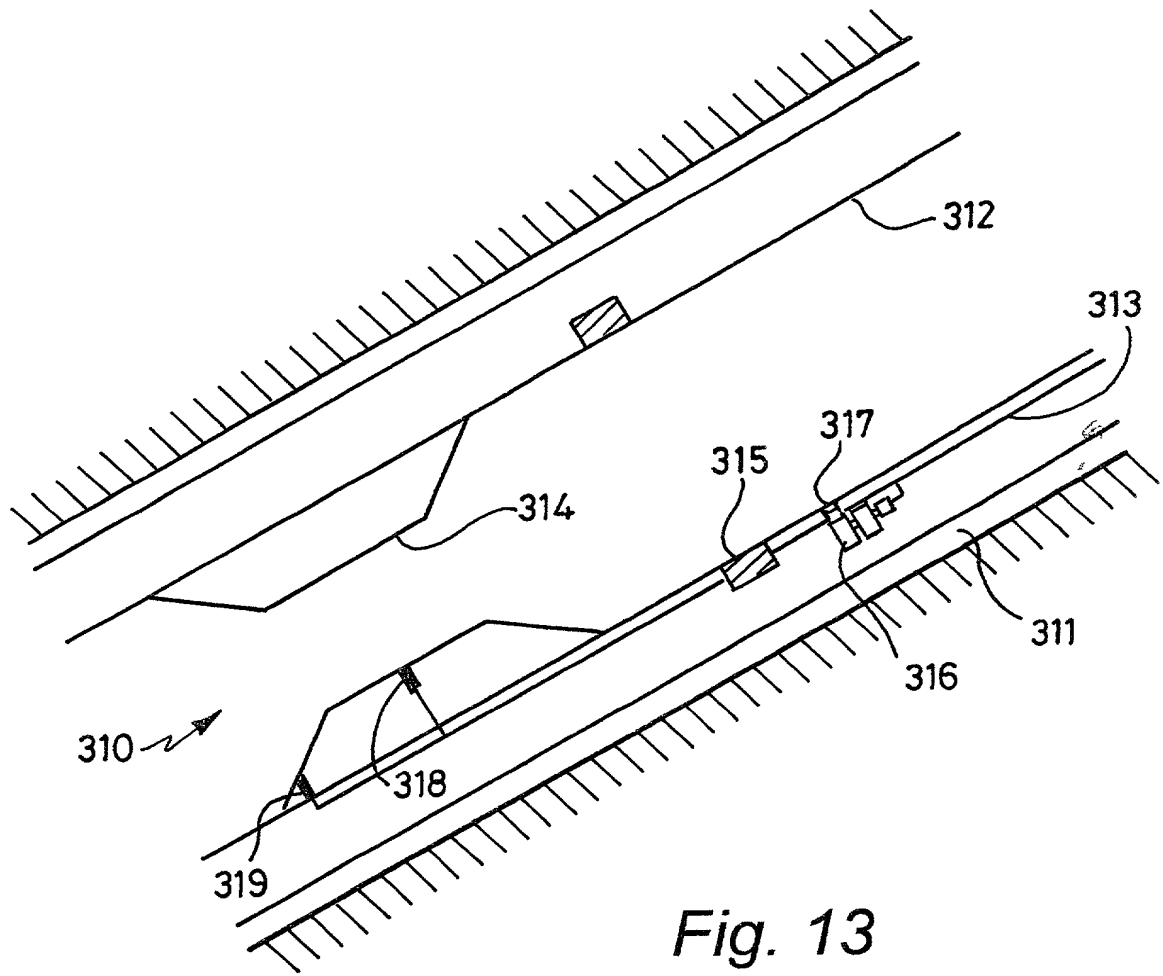


Fig. 11

*Fig. 12*



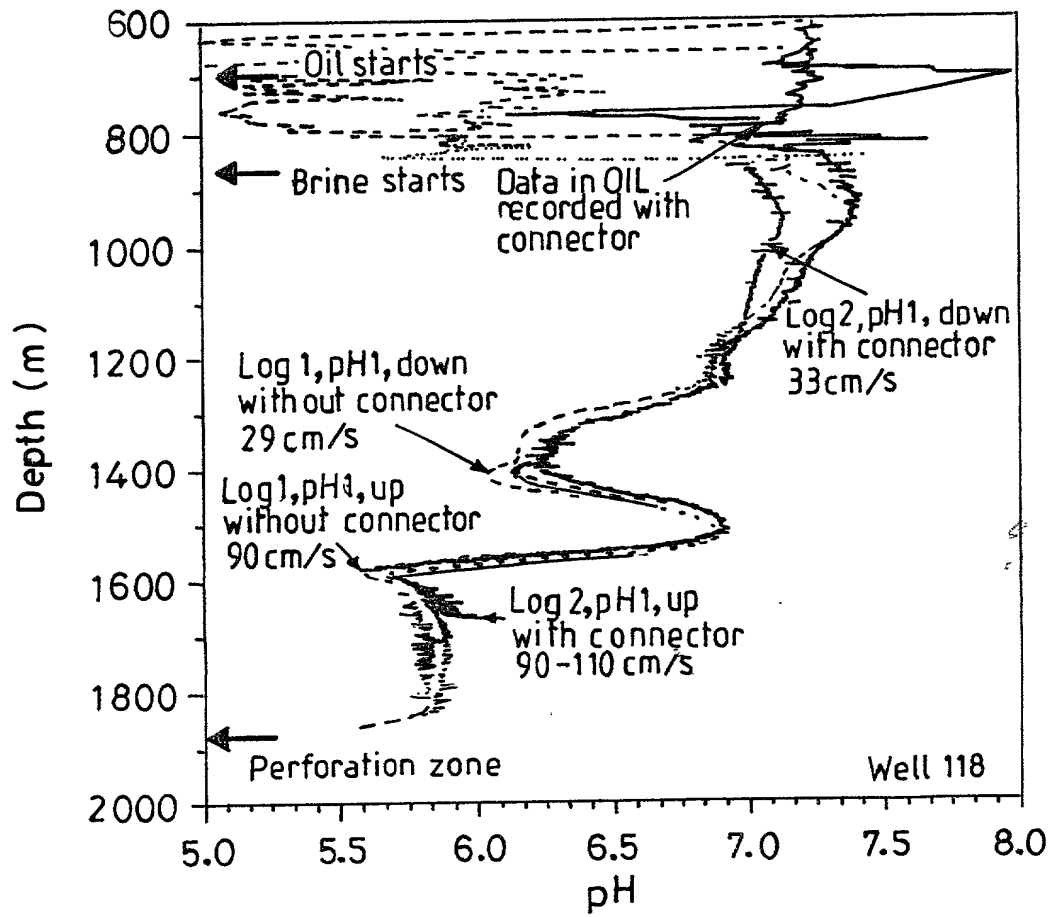


Fig. 14